

Second International Conference on Environmental Mutagens in Human Populations

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The Second International Conference on Environmental Mutagens in Human Populations was held in Prague, Czech Republic, 20–25 August 1995. The conference was organized by Radim J. Šram, William W. Au, the Czech and Slovak Society of Environmental Mutagenesis, the Czechoslovak Biological Society, the Environmental Mutagen Society, the European Environmental Mutagen Society, the International Association of Environmental Mutagen Societies, and the Environmental Mutagen Society of Japan. The conference was sponsored by the Prague Institute of Advanced Studies (Prague, Czech Republic), the Regional Institute of Hygiene of Central Bohemia (Prague, Czech Republic), and the University of Texas Medical Branch (Galveston, Texas). This is the second of a series of conferences on the same topic. The first conference was held in Cairo, Egypt, in January of 1992. The overall goal of this series of conferences, as stated by the late Professor F.H. Sobels, the Chairman of our International Advisory Board from 1989 to 1993, was to bring together scientists and to become a landmark in the field of environmental mutagens. The specific purpose of the Prague conference was to

enhance our awareness of human health problems caused by environmental mutagens and carcinogens, to update our achievements in the field, to foster international cooperation, and to establish future directions in this area of research.

The Prague conference was organized into six symposia, five forums, six poster sessions, and three workshop presentations. A total of 220 scientists from 30 countries attended the 6-day conference. The scientific program was organized specifically to meet the objectives of the conference. Several papers were presented to highlight human health problems that can be caused by exposure to different types of environmental mutagens such as food mutagens, industrial pollutants, pollutants from urban air, and radiation and radioactive contaminants. The mechanisms for induction of cancer from such exposure were presented. The involvement of abnormal p53 gene expression, as well as the importance of DNA repair, were elegantly presented. From the understanding of these mechanisms, biomarkers were developed to identify effects from excessive exposure to mutagens. These markers were classified as biomarkers of exposure and biomarkers of effect. DNA and protein adducts and DNA strand breaks generally fit into the first category while gene mutations and chromosome aberrations fit into the latter one. Papers were presented using the state-of-the-art fluorescence *in situ* hybridization assay (FISH) for detection of chromosome translocations in somatic and germ cells. These biomarkers, when used appropriately with good personal exposure measurement in standard and molecular

epidemiologic studies, can provide reliable indications for health effects. Several papers were presented to emphasize the importance of identifying individuals who are predisposed to develop mutagen-induced health problems. Individuals can be genotyped for inheritance of altered cytochrome P450, *N*-acetyl-transferase, and glutathione *S*-transferase genes. Good correlations among predisposed genotypes, activation of specific environmental mutagens, and development of cancers were observed. The scientific community was also informed that populations which have poor diet or have parasitic infections may also be predisposed to develop mutagen-induced health effects. In addition to considering cancer as the adverse outcome, developmental and genetic consequences were also discussed during the conference. Ostrosky-Wegman and Gonshe (1) pointed out that because the environment is a global entity, different countries should consider environmental equality; therefore, exporting hazardous products or dumping hazardous waste in other countries should be avoided. The importance of managing and using experimental data was also emphasized. Finally, one presentation was dedicated to the ethical issues that should be considered when population studies are conducted for identification of health effects and of high-risk individuals (2).

Ample opportunity was provided for sharing of knowledge and for discussions and interactions. Several criteria can be used to illustrate that the conference successfully met the stated objectives. All the sessions were well attended and constructive discussions were engaged. Numerous letters and evaluation forms were received, indicating that participation in the conference was of value. New collaborations among participants were documented. Furthermore, the participants enthusiastically expressed their desire to have a follow-up conference. Upon review by the International Advisory Board, it was decided to organize the third conference in Bangkok, Thailand in December 1999.

The Prague conference could not have been possible without the generous assistance and support of numerous individuals and organizations. Although it is not possible to list everyone who has made significant contributions, some representative individuals/organizations are listed as follows. Members of our International Advisory Board have been most helpful in

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